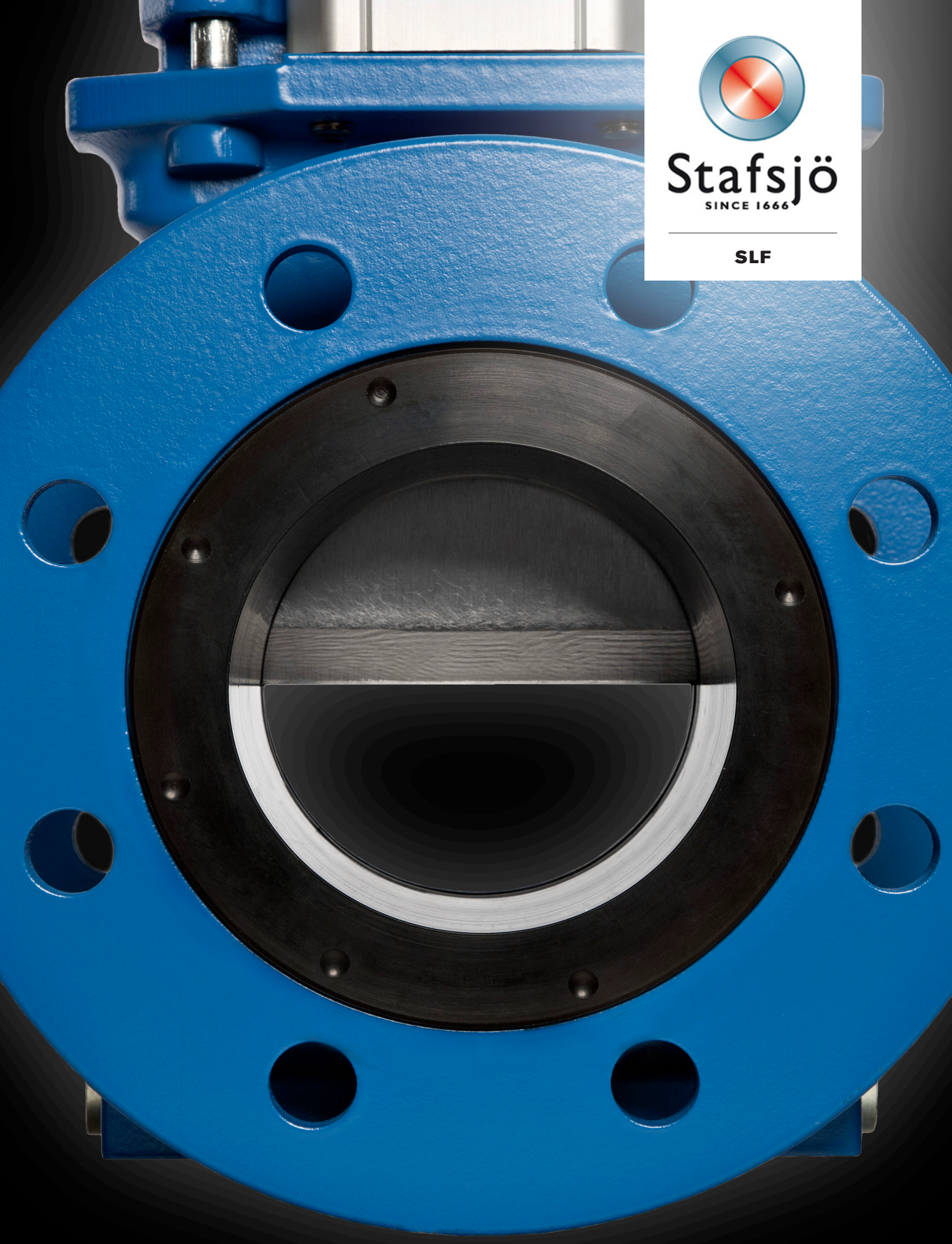


Stafsjö
SINCE 1666

SLF

Data is only for informational purpose.
All specifications are subject to change without notice.

First in knife gate solutions

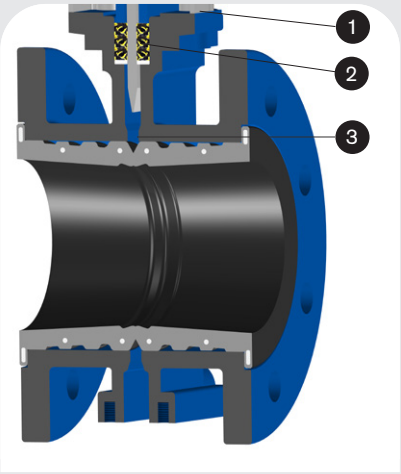
Knife gate valve SLF

Stafsjö's wide body knife gate valve SLF is a push through slurry valve with superior flow characteristics, offering reliable and bi-directional shut-off performance in the most abrasive and demanding mineral processing applications.

The SLF valve is modular designed and it can easily be customized with actuators and related automation accessories to different process conditions. The valve is also available with mechanical lock out. As standard, the SLF is supplied with a flanged robust and precision machined nodular iron valve body and a strong duplex stainless steel gate, which is also special grinded with purpose of reducing the friction when it cycles through the valve's rubber seats.

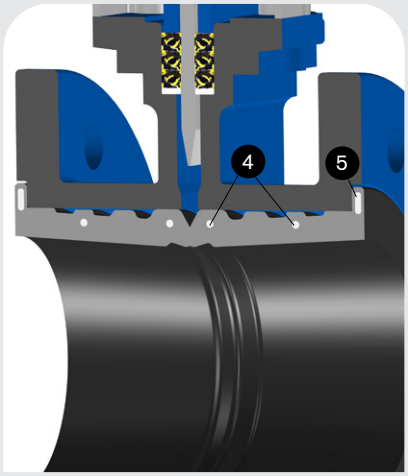
In addition to this slurry valve Stafsjö also offers the compact SLV up to DN 900 and two high pressure versions, the SLH and SLX, available in pressure rating up to 50 bar.

Product features



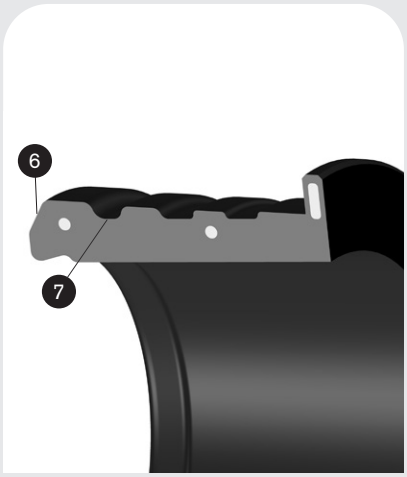
A precise gate alignment extend the service life

A solid top works (1), a robust gland box system (2) and precision machined gate supports (3) ensure accurate gate alignment throughout the full stroke, thus reducing stress and wear on seats.



Reinforcements rings ensure stability and performance

The front reinforcement rings (4) ensure the seats shape, position and strength remain during operation while the flange sealing reinforcements (5) secure a tight and exact position of the seats towards the gate and connecting flanges.



Expansion areas reduce stress and actuation force

The seat entrance area (6) is designed to give a smooth gate entry and the expansion areas (7) allows the seat to be axially flexible with minimal actuator force.

Pressure class

Max working pressure at 20 °C		Max differential pressure at 20 °C	
DN	bar	DN	bar
80 - 400	10	80 - 400	10

SLF configuration

Standard

Sizes: DN 80 - DN 400
Valve body: Nodular iron EN 5.3105
Gate: Duplex stainless steel EN 1.4470, S32205
Box packing: TwinPack with UHMW-PE scraper
Top works: Stainless steel tie rods encapsulated in aluminum beams up to DN 300. Coated carbon steel (EN 1.0045) on larger sizes. Stainless steel gate guards on automated valves.
Options and others from below.

Options

Valve body[1)]
Nodular iron EN 5.3105

Gate material
Duplex stainless steel EN 1.4462, S32205

Seats
Natural rubber or EPDM

Box packings
TwinPack with scraper in UHMW-PE

Top works
Stainless steel tie rods encapsulated in aluminium beams
Coated carbon steel (EN 1.0045) ≥ DN 350
Stainless steel beams

Actuators
Hand wheel with rising stem
Hand lever
Chain wheel
Bevel gear
Double-acting pneumatic cylinders
Single-acting pneumatic cylinders
Electric actuators
Hydraulic actuator

Flange drillings
EN 1092 PN 10
ASME/ANSI B16.5 Class 150 150, series A
AS 2129 Table D and E

Accessories
See p. 8 and our accessory data sheet for further information.

Design standards

Face-to-face dimensions
Stafsjö manufacturing standard.

Design, manufacturing, inspection and test
According to pressure equipment directive 2014/68/EU category I and II module A2. The valves are CE marked when it is applicable.

Stafsjö's valves are subject for pressure tests before delivery in opened and closed position with water at 20 °C according to EN 12266-1:2003 rate A. No visually detectable leakage is allowed for duration of the test.

On request 2.2 test report and 3.1 inspection certificate according to EN 10204.

Corrosion protection
Coated valve parts fulfill the requirements in EN ISO 12944 class C3 in applicable areas. Optional coatings include EN ISO 12944 class C4 or C5.

Seat service temperatures

Natural rubber: max +80 °C
EPDM: max +120 °C

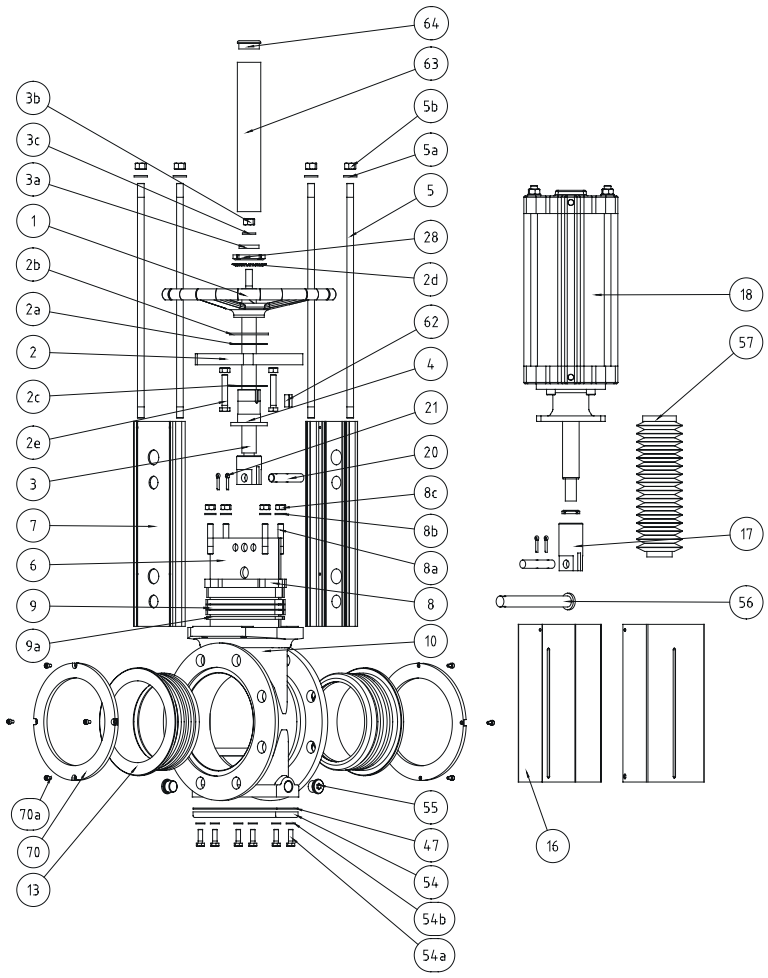
Box packing service temperature

TwinPack with scraper in UHMW-PE: max +85 °C

Stafsjö's TwinPack offers high mechanical strength, excellent chemical resistance and a tight seal to atmosphere. The TwinPack braid is made up by an elastic silicon rubber core surrounded by diagonally interlocked graphite filled PTFE with aramid fiber reinforced corners. The TwinPack braids resist pH 2-13 and temperatures -60 °C up to 260 °C.

Media type, pressure and operating intervals may also affect the seat and box packing material in different ways. Contact Stafsjö for advice.

1) The valve body is as standard supplied with purge ports: DN 80-DN 200: 1/2", DN 250-DN 400: 3/4", DN 450: 1"



Part list

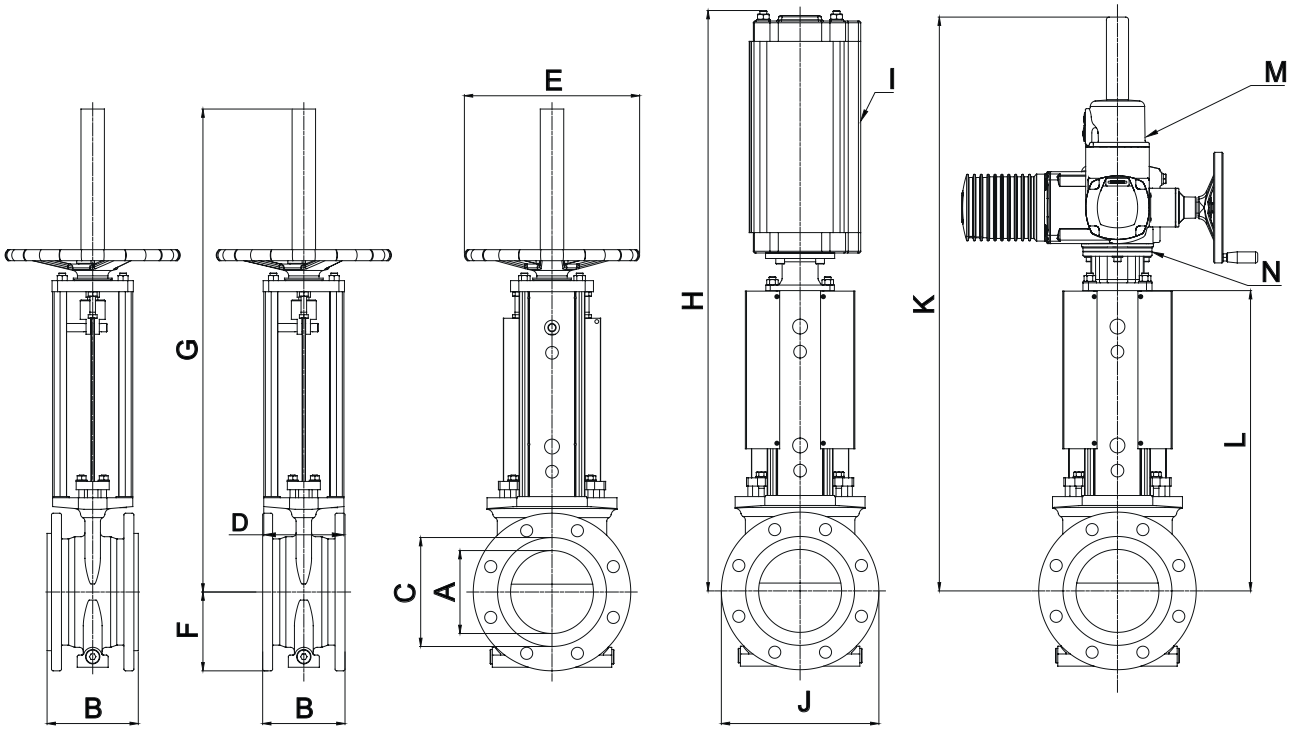
Pos.	Part	Material
1	Hand wheel	Coated cast iron Ø 315 EN-JL1040, GG25 ≥ Ø 400 EN-JL1030, GG20
2	Yoke	Coated steel EN 1.0038
2a	Bearing	Iglidur XTM
2b	Slide washer	Brass
2c	Bearing	Iglidur XTM
2d	Washer	Stainless steel EN 1.4305
2e	Screw	Zinc plated steel
3	Stem with gate clevis	Stainless steel EN 1.4305 ≥ DN 350: Gate clevis in coated carbon steel EN 1.0045
3a	Stop washer	Stainless steel EN 1.4301
3b	Screw	Stainless steel A2
3c	Washer	Stainless steel A2
4	Stem nut	Brass
5	Tie rod	≤ DN 300: Stainless steel EN 1.4301
5a[3)]	Washer	Stainless steel A2
5b[3)]	Nut	Stainless steel A2
6	Gate	Duplex stainless steel EN 1.4462
7	Beam	≤ DN 300: Anodized aluminium ≥ DN 350: Coated steel EN 1.0038
8	Gland	Coated nodular iron EN-JS1050, GGG50
8a	Stud bolt	Stainless steel A2
8b	Washer	Stainless steel A2
8c	Nut	Stainless steel A2
9[2)]	Box packing	TwinPack

Pos.	Part	Material
9a[2)]	Box scraper	UHMW-PE
10	Valve body	Coated nodular iron EN 5.3105
13[2)]	Seat	See options on page 3
16	Gate guard	Stainless steel EN 1.4301
17	Gate clevis	Stainless steel EN 1.4305 ≥ DN 350: Coated carbon steel EN 1.0045
18	Cylinder	See data sheet
20	Clevis pin	Stainless steel EN 1.4305
21	Split pin	Stainless steel EN 1.4436
47[1)]	Gasket	Dixo 4000
54[1)]	Bottom cover	Coated steel EN 1.0425
54a[1)]	Screw	Stainless steel A2
54b[1)]	Washer	Stainless steel A2
55	Plug	Zinc plated steel
56[1)]	Locking pin	Stainless steel EN 1.4301
57[1)]	Stem/piston rod protection	See page 7
62	Wedge	Stainless steel
63	Stemtube	Coated steel EN 1.0038
64	Plug	Plastic
65	Gate indicator	Stainless steel EN 1.4436
70[1)]	Load distribution rings	Stainless steel EN 1.4301
70a[1)]	Screws	Stainless steel A4

[1)] Optional accessories
[2)] Recommended spare parts
[3)] ≥ DN 350 details are replaced by screws, washers and nuts.

SLF with load distribution rings (LDR)

SLF without load distribution rings (LDR)



Main dimensions

DN	A[1]	A[2]	B[3]	B[4]	B[5]	C	D	E	F	G	H	I[6]	J	K	L	M[7]	N[8]	kg[9]
80	80	75	151	146	158	116	80	315	100	712	817	SC160	200	801	419	SA 07.2	F10/A	22
100	100	93	151	146	162	143	80	315	115	748	877	SC160	230	836	454	SA 07.6	F10/A	30
125	124	120	151	146	162	172	145	315	127	868	987	SC160	254	971	533	SA 10.2	F10/A	36
150	148	145	154	149	165	197	145	315	143	878	997	SC160	285	981	543	SA 10.2	F10/A	44
200	199	190	161	156	172	253	145	315	172	1031	1194	SC200	343	1079	641	SA 10.2	F10/A	56
250	249	240	226	221	241	303	145	400	204	1162	1326	SC200	406	1261	723	SA 10.2	F10/A	83
300	293	283	247	242	262	356	175	520	242	1400	1601	SC250	483	1409	861	SA 10.2	F10/A	142
350	337	327	256	251	271	408	200	520	268	1510	1726	SC250	535	1569	916	SA 10.2	F10/A	186
400	375	365	278	273	293	464	200	635	300	1650	1869	SC320	590	1701	998	SA 14.2	F14/A	228

A[1] Inlet diameter. A[2] Bore diameter.
B[3] Minimum required face-to-face for installation without load distribution rings. B[4] Installed face-to-face without load distribution rings.
B[5] Installed face-to-face with load distribution rings (LDR). When the pipes and flanges are rubber lined or when they do not match up to inlet diameter of the valve or exceed dimension "C" by min. 10 mm, it is recommended to assemble and install the valve with load distribution rings. The LDR ensure the seats get support and maintain correct position in the bore when the valve cycles. If load distribution rings are ordered they are as standard assembled on the valve upon delivery.
I[6] Recommended sizing of double-acting pneumatic cylinder type SC at normal operation with 5 bar air pressure. For other operating conditions, contact Stafsjö or your local representative for advice.
M[7] Recommended sizing of Auma SA electric motors at normal operation. For other operating conditions, contact Stafsjö or your local representative for advice.
N[8] Valve and Auma SA interface. The electric motors are mounted as standard according to ISO 5210 connection A (rising stem).
[6] Weight in kg for valve including hand wheel with rising stem, ≥ DN 450 prepared for bevel gear or electric actuator.
Main dimensions are only for information. Contact Stafsjö for certified drawings.

Flange drilling according to EN 1092 PN 10

DN	80	100	125	150	200	250	300	350	400	450
Bolt circle diameter (mm)	160	180	210	240	295	350	400	460	515	565
Number of throughgoing holes	8	8	8	8	8	12	12	16	16	20
Size of throughgoing holes (mm)	Ø18	Ø18	Ø18	Ø22	Ø22	Ø22	Ø22	Ø22	Ø26	Ø26

Flange drilling according to ASME/ANSI B16.5 Class 150

DN	80	100	125	150	200	250	300	350	400	450
Bolt circle diameter (mm)	152,4	190,5	215,9	241,3	298,5	362	431,8	476,3	539,8	577,9
Number of throughgoing holes	4	8	8	8	8	12	12	12	16	16
Size of throughgoing holes (mm)	Ø18	Ø18	Ø22	Ø22	Ø22	Ø26	Ø26	Ø30	Ø30	Ø30

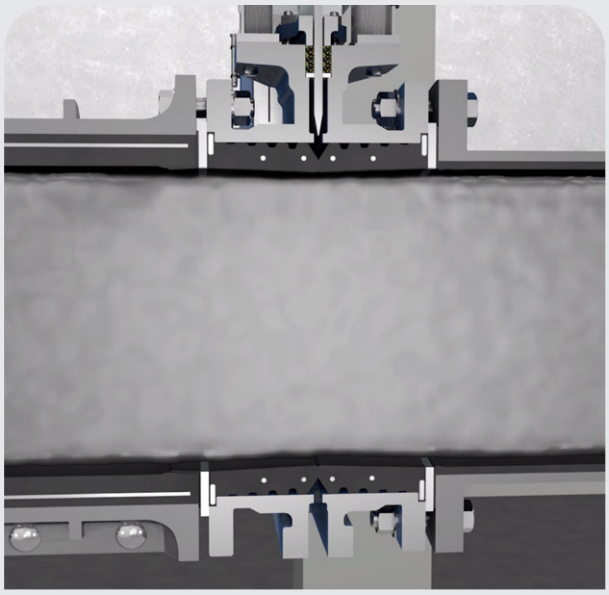
Flange drilling according to AS 2129 Table D

DN	80	100	125	150	200	250	300	350	400	450
Bolt circle diameter (mm)	146	178	210	235	292	356	406	470	521	584
Number of throughgoing holes	4	4	8	8	8	8	12	12	12	12
Size of throughgoing holes (mm)	Ø18	Ø18	Ø18	Ø18	Ø18	Ø22	Ø22	Ø26	Ø26	Ø26

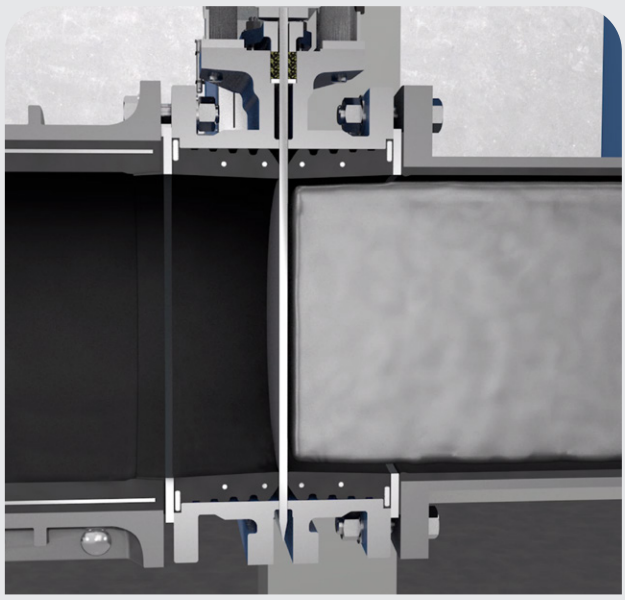
Flange drilling according to AS 2129 Table E

DN	80	100	125	150	200	250	300	350	400	450
Bolt circle diameter (mm)	146	178	210	235	292	356	406	470	521	640
Number of throughgoing holes	4	8	8	8	8	12	12	12	12	16
Size of throughgoing holes (mm)	Ø18	Ø18	Ø18	Ø22	Ø22	Ø22	Ø26	Ø26	Ø26	Ø26

Reliable isolation of abrasive slurry



The full bore SLF form a rubber lined extension of the pipe system when it is opened position with no area for media build up.

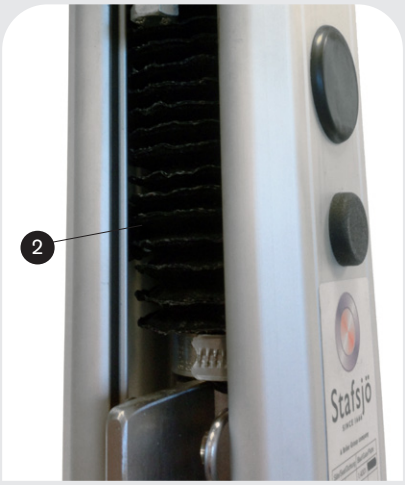


When the valve cycles to closed position the two seats are displaced axially forming a seal with the gate until it forms a complete closure – 100 % tight in any pressure direction.

SLF accessories

Lockout pin (1)

For security reason the slurry valves are always supplied with extra holes in the beams and gate to enable lockout in opened or closed position with a locking pin. The locking pin is supplied in stainless steel EN 1.4301.

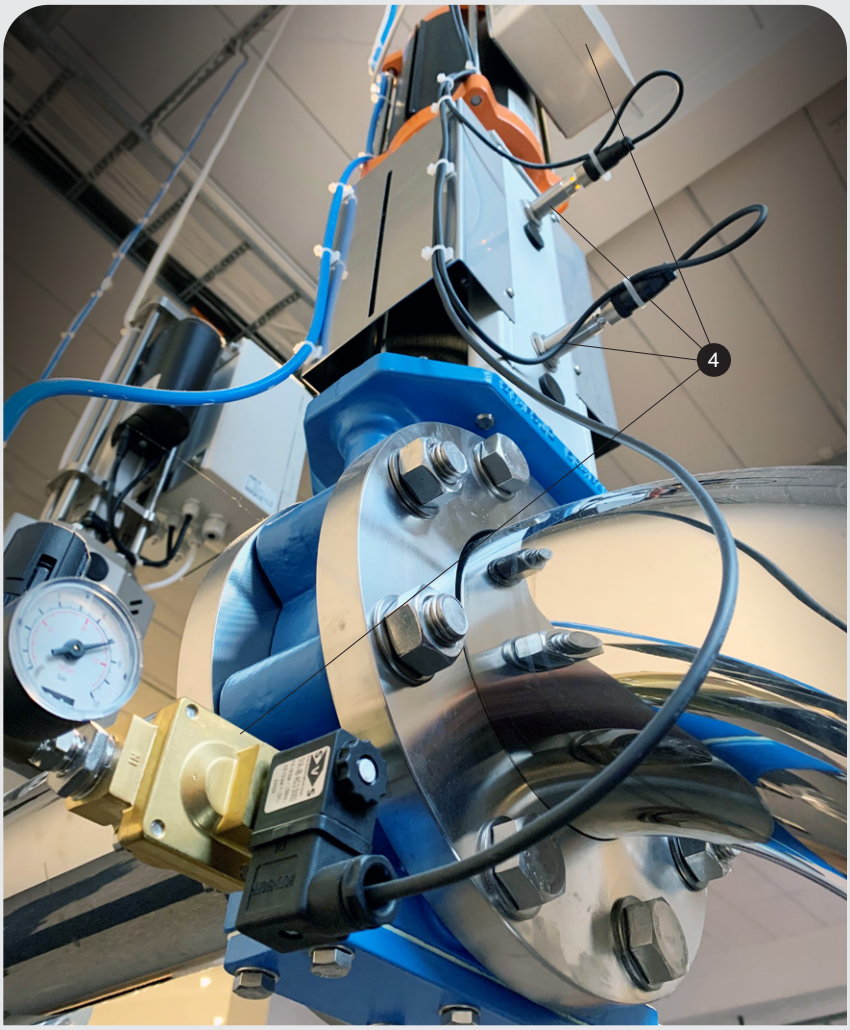


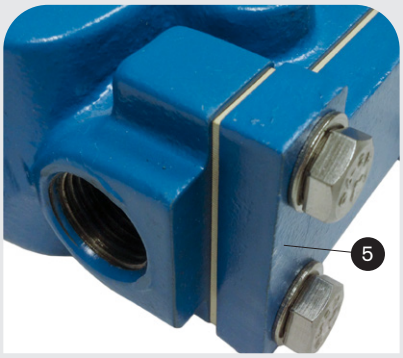
Stem and piston rod protection (2)

The slurry valves can be supplied with a bellow (SP) to protect the stem/piston rod from dirt and dust.

Load distribution rings (3)

When the pipes and flanges are rubber lined, they do not match up to inlet diameter of the valve or exceed dimension “C” by min. 10 mm, it is recommended to assemble and install the valve with load distribution rings (LDR) to ensure long service life and reliable operation. The load distribution rings are supplied as standard in stainless steel EN 1.4301.





Fully automated purge system (4)

It is normal for the SLF to discharge media externally when it cycles open/close through the port in bottom of the valve body. This prevent build of solids and enable the SLF to operate through a wide range of solid concentrations. To control the discharge, SLF can be supplied with an optional bottom cover (5) and a fully automated purge system (4), only to be connected to flush source at site and 100 - 240 V AC power supply. Contact Stafsjö for details and further info.

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